

# ANALYSIS OF BASIC CLIMATIC CONDITIONS FOR THE *IN SITU* CONSERVATION OF PLANT GENETIC RESOURCES IN BURKINA FASO

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As part of a project to strengthen the scientific basis of *in situ* conservation of agricultural biodiversity on-farm, researchers in Burkina Faso are working to characterise and monitor changes in the agroecosystems where the activities of the project are taking place. Basic agro ecological research relates primarily to the climate, the soil and the vegetation. This article addresses two significant climatic factors in Burkina Faso on which crop production depends on: rainfall and temperature. The daily surveys/records from 67 stations covering the period from 1950 to 1999 were used to analyse the rainfall patterns of the whole country.

A comparison between the average rainfall of 1951-1980 and 1961-1990 reveals the appearance of the 400 mm isohyet in the far north of the country and a disappearance of the one of 1200 mm in the South-West over the past 50 years. There is latitudinal sliding of all isohyets towards the South, translating to a reduction of 100 mm in average rainfall. On the contrary, the average rainfall of the decade (1990-1999) shows some improvement. The 400 mm isohyet rose up to northern border of the country, and the 1100 mm isohyet reappeared in the South. This rainfall dynamics has implications on genetic erosion on a North/South gradient in Burkina Faso.

The data recorded at synoptic representative stations in the project sites were used to analyse temperature patterns in the three Burkina Faso project sites. In Dori, the northernmost station, the minimum and maximum values of temperature under shade during the period of 1950-1999 were 11°C and 44°C respectively. In Pô, the station in the south, the minimum and maximum values go from 15°C to 40°C respectively. In the entire project zone, one notes an upward trend in average temperature. At Dori, there was net increase of about 1.5°C from an average of 28.5 to 30.0°C. If the trend continues, it is estimated that in the year 2010, the average temperature might be 30.5°C at Dori, 29.5°C at Ouahigouya, and 28.2°C at Pô.

Climatic conditions are critical to agricultural and economic activities for rural populations in Burkina Faso. It is interesting to note the perceptions of the rural population on climate change and variability in the last 50 years. These farmers have over time developed adaptation strategies to cope with drought and desertification. Some surveys have been carried out on a sample of 270 men and women farmers from nine (9) villages of the project sites. The results showed that the people have good knowledge of the rainfall patterns. They are conscious that changes have occurred in the climate and have as a result, abandoned some crops and varieties and have changed some of their farming systems. They have also developed local practices of maintaining plant diversity on farm.